METHOD AND SYSTEM FOR COLLECTING AND POOLING UNQUALIFIED BATCHES OF MAIL FOR PRE-SORTING

Related Applications

This application claims the benefit and priority of pending Provisional Application having Serial No. 60/246,304, filed November 6, 2000, which is incorporated herein by reference.

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Technical Field

The present invention relates generally to the field of mail handling. More particularly, the invention relates to a method and system for collecting and transporting mail in a traceable container to a holding facility where it is pooled with other such containers for pickup and processing by a mail pre-sorting facility. The invention also provides a solution to the technical problem of overburdened postal sorting equipment.

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Background of the Invention

Many government postal services, including the United States Postal Service, offer a reduced postage rate for pre-sorted mail. Pre-sorting reduces the processing burden on the postal service and speeds delivery. Postal service regulations often impose stringent standards for pre-sorted mail which are expensive and difficult to meet, especially for mail senders with fewer than several thousand mail pieces. Standards governing such characteristics as batch volume, size uniformity, destination variety, batch certification, typeface, zip code length, and bar coding, make it difficult to obtain the lowest rate for pre-sorted mail.

A mail sender may employ personnel and buy specialized equipment to pre-sort its mail, or it may use the services of a mail pre-sorting facility. Mail pre-sorting facilities stay abreast of postal regulations and offer pre-sorting services along with documentation certifying that each batch of pre-sorted mail complies with postal service regulations. Most mail pre-sorting facilities, however, only serve customers with large batches of mail; for example, greater than two thousand pieces. Low-volume customers, therefore, must perform their own sorting and regulation compliance or pay the higher postage rate. Many low-volume customers lack the technology and the personnel to pre-sort and meet the stringent postal regulations, so instead they pay the higher postage rate.

Customers with the technology, equipment, and personnel may be able to achieve the level of pre-sorting necessary to qualify for a reduced postage rate. The postal regulations typically include a list of published rates which are correlated to the degree of pre-sorting accomplished and other factors. For example, a batch of two thousand or more mail pieces, of similar weight and size, may qualify for a lower rate such as 32.2 cents instead of the first-class or full rate of 34.0 cents. To earn this kind of discount, the customer must learn and comply with the regulations and published rates of the local postal service, apply postage to each mail piece at the published rate using a postage meter to accommodate a decimal rate such as 32.2 cents, pre-sort the entire batch as required, prepare documents such as a certificate and/or a manifest certifying compliance with the applicable postal regulations, and then deliver the sorted batch to the local post office because such a batch would be too large for collection by a mail carrier.

The low-volume customer, therefore, is faced with multiple barriers to entry when seeking a reduced postage rate. From the pre-sorting task to the burden of transporting the batch to a post office, the low-volume customer is prohibited in many cases from obtaining a reduced postage rate in an economically feasible manner.

In some countries, government postal services sort incoming mail using both manual labor and sorting machines. Commercial pre-sorting, where available, reduces the processing burden on the postal service and speeds delivery. Most pre-sorting businesses, however, will only sort large batches of mail; for example, greater than two thousand pieces. Smaller batches, therefore, are often submitted directly to the postal service for sorting and delivery.

The burden of sorting these smaller batches of up to two thousand pieces creates additional expense for the postal service and causes a delay in mail delivery. Increased sorting expenses often result in higher postage rates and/or unacceptable delays in delivery. Where commercial pre-sorting is not available, the postal service must carry the burden of sorting incoming batches of all sizes.

Many postal services lack the resources to continually upgrade and install new sorting equipment. As the number and variety of incoming mail increases, the need to successfully manage and allocate sorting resources becomes more important. In some cases, a postal service depends on commercial pre-sorting to handle the very large batches of mail, while depending upon its own sorting equipment to handle the smaller batches.

Many businesses in the developing economies generate medium-sized batches of mail that are too small for commercial pre-sorting (less than two thousand pieces, for example), but yet are so large that the batch imposes a significant burden on the postal service. For example, if a few businesses each submit a batch of eighteen hundred mail pieces on a single day to be sorted, such a request may be beyond the sorting capacity of the post office. The burden caused by these medium-sized batches is a technical problem requiring an innovative solution.

Most mail senders lack the technology, equipment, and knowledge to do their own pre-sorting. Some postal services promulgate rules and regulations for pre-sorted mail that are difficult or impractical to learn and understand for the customer who only has an

occasional, medium-sized batch of mail. Furthermore, many postal services require documentation such as a certificates and detailed manifests to certify compliance with the applicable postal regulations. Customers who do not pre-sort on a regular basis will be unfamiliar with the current requirements.

While some postal services publish reduced postage rates for pre-sorted mail, many government postal services only offer reduced postage rates to customers who have the knowledge and the willingness to negotiate for a lower rate. Customers with ongoing relationships with the local postal service may be able to achieve a lower rate, but customers who only seldom have a large batch of mail typically lack the resources and information to contact the postal service and obtain a lower rate. Also, customers unfamiliar with the local customs and practices typically decide to submit their medium-sized batches directly to the postal service for sorting instead of taking the time and incurring the expense associated with learning about and negotiating with the postal service.

Because of these barriers to entry for lower-volume mail senders, many government postal services face increasing demands on already-overburdened sorting equipment.

Thus, there is a need for a method and system of processing mail pieces for low-volume mail senders that earns a reduced postage rate without incurring the high costs associated with pre-sorting relatively small batches of mail.

There is a further need for a method and system for enabling low-volume mail senders to participate in a discounted-rate mail system of a local postal service.

There is a related need for a method and system to facilitate the participation of low-volume mail senders in the services offered by mail pre-sorting facilities.

A further need exists for a method and system capable of earning a lower postage rate for a batch of mail than the mail sender could earn outside such a system.

Additionally, there is a need for a solution to the technical problems experienced by the postal service when faced with the burden of sorting medium-sized batches of mail.

There is a related need for a solution to lessen the burden placed on the postal service when mail volume increases due to batches that cannot be processed by a mail pre-sorting facility.

There is a further need for a system of processing small batches of mail that fosters participation by mail senders who only need pre-sorting occasionally. There is a related need for a system of mail processing that takes advantage of published or negotiated rates for mail senders without requiring extensive and ongoing familiarity with local customs and practices.

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Summary of the Invention

The above and other needs are met by the present invention which, generally described, provides a system and method for collecting several unqualified batches of mail and pooling them into a large batch for pre-sorting into a qualified batch in order to earn a reduced postage rate from a postal service. The collected small batches of mail are described as unqualified because, before processing by the system, they do not qualify for a reduced postage rate.

In one aspect of the present invention, the system includes a plurality of mail senders who fill containers with unsorted mail pieces, a plurality of holding facilities to receive and gather the containers into a pool, and a pre-sorting business to receive the pool and pre-sort the mail pieces into a qualified, pre-sorted batch for mailing at a reduced rate. The system may include a plurality of pre-sorting businesses. In one embodiment, one or more of the holding facilities is part of a transport business.

In another aspect of the present invention, postage is applied to each mail piece by the sender at a program rate. The program rate is generally less than the full postage rate for unsorted mail. In one

embodiment, the program rate is set by the transport business and communicated to the participating senders.

In one alternative embodiment, the pre-sorting business applies the program rate of postage to each mail piece, after which the cost of the postage applied, plus an additional fee, may be charged to the sender.

In one embodiment of the system, the transport business provides empty containers to the senders. The containers may be pre-addressed to a particular holding facility. The transport business collects containers from the senders and transports the containers to one of the holding facilities. For this service, the sender pays a transport fee for each container.

The transport fee is either a flat fee or a variable fee based on the weight of the container. In either case, the transport fee is paid in exchange for shipping one container, regardless of the number of mail pieces inside the container.

In one embodiment, the transport business ships the pool from the holding facility to the mail pre-sorting facility. Alternatively, the pre-sorting business may collect the pools from the holding facilities.

In another aspect of the system, the pre-sorting facility receives the pool of containers and sorts the mail pieces into a pre-sorted batch. The pre-sorting business officially tenders the pre-sorted batch to the postal service, along with a certificate or manifest certifying that the pre-sorted batch is qualified for mailing at an entry rate of postage. The entry rate is governed by postal regulations and is generally less than the full rate. Preferably, the entry rate is less than the program rate.

When the pre-sorting business tenders the pre-sorted batch to the postal service, the postal service pays a rebate to the pre-sorting business. The rebate represents the difference between the entry rate and the program rate, times the number of mail pieces in the pre-sorted batch.

In another aspect of the present invention, the pre-sorting business pays an agreed upon fee to the transport business in the form of a transporter rebate.

In another aspect of the invention, a transport business accomplishes a method of supplying mail pieces to one or more pre-sorting businesses. The method includes communicating a program postage rate to the mail senders, with instructions to apply the program rate to each mail piece and to fill one or more containers with mail pieces. The transport business receives the filled containers and gathers the containers into one or more pools at one or more holding facilities for later distribution to the pre-sorting business.

In one embodiment, the transport business receives a transport fee from each mail sender in exchange for collecting and transporting the container, regardless of the number of mail pieces inside the container. The transport fee is either a flat fee or a variable fee based on the weight of the container. In either case, the number of mail pieces inside the container need not be counted.

The transport business may transport the pools of containers to the mail pre-sorting business or, alternatively, the mail pre-sorting business may collect the pools.

In one embodiment, the transport business sets the program rate to be applied to each mail piece. The transport business may provide empty containers to the senders. The containers may be pre-addressed to a particular holding facility. The transport business may also receive requests from senders to participate.

In another aspect of this method, the transport business receives a transporter rebate from the mail pre-sorting business in exchange for the pools of containers gathered by the transport business.

In another aspect of the invention, a mail pre-sorting business accomplishes a method of collecting mail pieces from a plurality of mail senders. The method includes entering into an agreement to pay a transporter rebate to a transport business in exchange for the pools of containers gathered by the transport business. Under the

agreement, the pre-sorting business receives the pools of containers and pays the transport business a transporter rebate which, in one embodiment, is an agreed upon portion of the rebate earned from a postal service by pre-sorting the pooled batch of mail.

In one embodiment, where each mail piece is metered at a program rate by the sender, the method includes opening the containers, sorting the mail pieces into a pre-sorted batch, preparing a certificate or manifest, tendering the batch to a postal service, and receiving a rebate from the postal service which represents the difference between the entry rate and the program rate, times the number of mail pieces in the pre-sorted batch. The method may include commingling the mail pieces before sorting. The rebate, preferably, is greater than the transporter rebate.

In one alternative embodiment, the pre-sorting business also applies the program rate of postage to each mail piece after opening each container. The pre-sorting business receives a fee from each sender, for each container, in the amount of the cost of the postage applied to each mail piece plus an additional fee.

In another aspect of the invention, a system for financing the collection, pooling, and processing of mail pieces into a pre-sorted batch includes a program rate of postage, a transport fee, a transporter rebate, a rebate, and one or more agreements between and among the senders, the transport business, and the mail pre-sorting business.

The program rate of postage is applied to each mail piece by the sender. Preferably, the program rate is less than the full rate of postage for unsorted mail, but greater than the entry rate expected to be earned by pre-sorting.

The transport fee is paid by each senders to a transport business in exchange for shipping a container filled with mail pieces. The transport fee may be a flat fee or a variable fee based on the weight of the container. Preferably, the number of mail pieces inside the container need not be counted.

The transporter rebate is paid by the mail pre-sorting business to the transport business in exchange for the pools of containers gathered by the transport business.

The rebate is paid by the postal service to the pre-sorting business in exchange for tendering a pre-sorted batch of mail sorted according to postal regulations. The rebate represents the difference between the entry rate and the program rate, times the number of mail pieces in the batch. Preferably, the rebate is greater than the transporter rebate.

In a preferred embodiment, the program cost to the sender is less than the cost of applying the full postage rate to each mail piece. The program cost includes the program rate times the number of mail pieces, plus the transport fee.

In another aspect, the present invention creates a cooperative of mail senders, transport businesses, and mail pre-sorting businesses, working together to pool small batches of unsorted mail into one or more larger, pre-sorted batches for mailing at a reduced entry rate of postage. The cooperative is bound by one or more agreements between and among the participants.

In one embodiment, the agreement provides that each sender may apply a program postage rate to each mail piece, fill a container with mail pieces, and pay a transport fee to the transport business in exchange for collecting the container.

In another aspect of one embodiment, the agreement provides that the transport business may receive requests from senders who want to join the cooperative, provide a plurality of empty and pre-addressed containers to each sender, establish the program rate based upon operating conditions, communicate the program rate to each sender, receive a transport fee from each sender for each container collected, and receive a transporter rebate from the pre-sorting business in exchange for the collection of the containers into one or more pools.

In another aspect of one embodiment, the agreement provides that the mail pre-sorting business may open the containers

within each pool, commingle the mail pieces, sort the mail pieces into a pre-sorted batch, prepare a document certifying to the postal service that the pre-sorted batch is qualified for mailing at an entry rate, tender the pre-sorted batch to the postal service, receive a rebate from the postal service in an amount that reflects the difference between the entry rate and the program rate, and pay a transporter rebate to the transport business.

In another aspect of the invention, the method of processing medium-sized batches of mail into a larger batch suitable for pre-sorting includes the steps of establishing one or more holding facilities and establishing a mail pre-sorting facility separate from the postal service facility. The method further includes monitoring the size of incoming batches of mail and identifying medium-sized batches. The mail pieces may bear a program postage rate. The medium-sized batches are diverted into one or more containers, which are transported to one of the holding facilities, where the containers are gathered into one or more pools.

A medium-sized batch is generally defined by a lower limit and an upper limit. The lower limit depends in part upon the total sorting load at the postal service facility on a particular day. The upper limit depends in part upon the sorting capacity and the total sorting load at the mail pre-sorting facility on a particular day.

When a pool includes enough mail pieces to be accepted for pre-sorting, the method of the present invention further includes transporting the pool to a mail pre-sorting facility, where it is sorted into a pre-sorted batch suitable for mailing at an entry rate of postage.

In another aspect of the present invention, medium-sized batches of unsorted mail pieces are pooled into a larger pre-sorted batch for delivery to a postal service. In this aspect, the mail preparation system includes one or more holding facilities and a private mail pre-sorting facility. The method of processing medium-sized batches includes the steps of monitoring the size of incoming batches of mail and identifying medium-sized batches. The mail pieces may bear a

program postage rate. The medium-sized batches are diverted into one or more containers, which are transported to one of the holding facilities, where the containers are gathered into one or more pools.

The method of the present invention further includes transporting the pool to a mail pre-sorting facility, where it is sorted into a pre-sorted batch suitable for mailing at an entry rate of postage. The postal service pays a rebate to the pre-sorting business. The rebate per mail piece represents the difference between said entry rate and said program rate.

In another aspect of the invention, a transport business accomplishes a method of supplying medium-sized batches of unsorted mail pieces to one or more mail pre-sorting businesses. The method includes receiving requests from mail senders, distributing empty containers to the senders, and then collecting and transporting the containers to one or more of the holding facilities. At the holding facility, the filled containers are gathered into one or more pools for later distribution to the pre-sorting business.

The method may further include communicating a program postage rate to the mail senders, with instructions to apply the program rate to each mail piece.

In one embodiment, the transport business receives a transport fee from each mail sender in exchange for collecting and transporting the container.

In another aspect of this method, the transport business receives a transporter rebate from the mail pre-sorting business in exchange for the pools of containers gathered by the transport business.

In another aspect of the invention, a mail pre-sorting business accomplishes a method of collecting mail pieces from a plurality of mail senders. The method includes receiving the pools of containers, opening the containers, sorting the mail pieces into a pre-sorted batch, and tendering the pre-sorted batch to the postal service facility for mailing at an entry rate of postage. The method may further include commingling the mail pieces with others. The method may also

include preparing a certificate or manifest certifying that the pre-sorted batch is qualified for mailing at the entry rate.

In one embodiment, where a program postage rate is applied to each mail piece by the sender, the method further includes receiving a rebate from the postal service which represents the difference between the entry rate and the program rate, times the number of mail pieces in the pre-sorted batch.

Thus, it is an object of the present invention to solve the technical problems experienced by the postal service caused by the burden of sorting medium-sized batches of mail.

It is a related object of the present invention to reduce the burden on the postal service when mail volume increases using a method of identifying, diverting, and pooling together medium-sized batches for processing by a separate mail pre-sorting facility.

It is a further object of the present invention to provide a method of processing mail that fosters participation by mail senders who only need pre-sorting occasionally. It is a related object of the present invention to provide a solution that allows mail senders to take advantage of published or negotiated postage rates without requiring extensive and ongoing familiarity with local customs and practices.

Additionally, it is an object of the present invention to provide a method and system of processing mail pieces for low-volume mail senders that earns a reduced postage rate without incurring the high costs associated with pre-sorting relatively small batches of mail.

It is a further object of the present invention to provide a method and system for enabling low-volume mail senders to participate in the discounted-rate mail system of the local postal service. It is a related object of the present invention to facilitate the participation of low-volume mail senders in the services offered by mail pre-sorting facilities.

It is also an object of the present invention to provide an economical system for financing the pooling and processing of mail which is based in part on the postal service rebate earned by pre-sorting.

It is a related object of the present invention to use the effective rate savings to drive the system and thereby enable low-volume mail senders to reap the benefits of pre-sorting that were otherwise available only to high-volume mail senders.

Additionally, it is an object of the present invention to solve the technical problems experienced by the postal service caused by the burden of sorting medium-sized batches of mail.

It is a related object of the present invention to reduce the burden on the postal service when mail volume increases using a method of identifying, diverting, and pooling together medium-sized batches for processing by a separate mail pre-sorting facility.

It is a further object of the present invention to provide a method of processing mail that fosters participation by mail senders who only need pre-sorting occasionally. It is a related object of the present invention to provide a solution that allows mail senders to take advantage of published or negotiated postage rates without requiring extensive and ongoing familiarity with local customs and practices.

These and other objects accomplished by the present invention will become apparent from the following detailed description of one preferred embodiment in conjunction with the accompanying drawings.

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Brief Description of the Drawings

Fig. 1 depicts the flow of mail pieces according to an embodiment of the present invention.

Fig. 2 shows the handling and processing of mail pieces in detail, according to an embodiment of the present invention.

Fig. 3 depicts the flow of funds and information between and among the participating entities, according to an embodiment of the present invention.

Fig. 4 is a graph showing the relative postage rates within the system, according to an embodiment of the present invention.

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Detailed Description of the Drawings

Referring now in more detail to the drawings, in which like numerals indicate like elements throughout the several views, **Fig. 1** is a flowchart illustrating the flow of mail according to an embodiment of the present invention.

The system **10** contemplates participation by a plurality of mail senders **100**, a transport business **200**, one or more pre-sorting businesses **300**, and a postal service **400**. The flowchart in **Fig. 1** is generally divided into four columns, each containing the facilities of the four participants in the system **10**. The mail processing generally proceeds from left to right.

Fig. 1 depicts a variety of mail senders **100**, including without limitation individual consumers, small or large businesses, and small or large organizations. One type of mail sender **100** who may benefit from participation in the system **10** typically has a batch of mail that is too small to be accepted for processing by a mail pre-sorting business **300**. Many mail pre-sorting businesses **300** only serve senders **100** who have large batches of mail; for example, greater than two thousand pieces. A mail sender **100** with a substantial batch of mail, such as fifteen hundred pieces, may benefit from participation in the system **10** because such a batch is too large for the sender **100** to pre-sort in an economically feasible manner. Also, such a batch is generally too large for collection by a mail carrier from the postal service **400**, so the sender **100** must transport the sorted batch to a postal service facility **45**. Faced with this dilemma, many mail senders **100** choose to stamp the unsorted mail at the first-class or full postage rate and then transport the stamped batch to a postal office **40** for delivery. The system **10** of the present invention offers an easy and cost-effective alternative.

A batch of unsorted mail pieces **95** may be described as a medium-sized batch because it is too small by itself for pre-sorting, yet too large for economical handling by the sender **100**. A medium-sized batch of unsorted mail pieces **95** can be described as having a quantity between a lower limit and an upper limit. The lower limit depends in

part upon the sorting load experienced on a particular mailing day. For example, on a high load day, a postal service **400** may find it efficient to divert batches of as few as two hundred pieces for pre-sorting elsewhere, whereas batches as high as one thousand pieces might be pre-sorted at the postal facility **45** when the load is low. The upper limit generally depends in part upon the capacity of the mail pre-sorting facility **75** and upon the number of mail pieces required for acceptance by a mail pre-sorting business **300**. If, for example, the batch must contain at least two thousand pieces before a mail pre-sorting business **300** will accept it for pre-sorting, then batches below this upper limit may be diverted and pooled with other such batches until the pool contains a sufficient quantity of mail pieces to be accepted for pre-sorting.

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The Flow of Mail

Broadly described, each participating sender **100** places unsorted mail into a container **50**. The containers **50** are collected and transported to a holding facility **70**, where the containers **50** are gathered into one or more pools **80**. The pools **80** are then collected and transported to a mail pre-sorting facility **75**, where the pools **80** are commingled and sorted into one or more pre-sorted batches **90**. The pre-sorted batches **90** are then transported to a postal facility **45** for delivery at a reduced postage rate without requiring a significant amount of further processing. Diversion of mail in this manner reduces the postal service's reliance upon its own mail sorting equipment and personnel.

The transport business **200** may include a transport office **20** and one or more holding facilities **70**. In one embodiment, the holding facilities **70** are regional or local hubs of the transport business **200**. In one alternative embodiment, the holding facilities **70** are part of the postal service **400**. The holding facility **70** might also be a separate, independent entity, such as a temporary warehouse. When the transport business **200** or holding facility **70** is described in this application as

receiving items, the act of receiving may include collecting and transporting.

The pre-sorting business **300** may include a pre-sorting office **30** and a plurality of regional and local pre-sorting facilities **75**. In one embodiment, the pre-sorting business **300** may include one or more holding facilities **70** used in the system **10**. When the pre-sorting business **300** is described in this application as receiving items, the act of receiving may include collecting and transporting. In one alternative embodiment, the pre-sorting facility **75** is part of the postal service **400**. Where the pre-sorting facility **75** is described as being separate from the postal service facility **45**, it should be understood that the two facilities may reside in the same building or they may be physically separated. The concept of separation implies a division of the sorting tasks, not necessarily a division of the structure where such tasks are performed.

The postal service **400** generally includes a postal office **40** and a plurality of regional and local postal service facilities **45**. Although one postal service facility **45** is shown in **Fig. 1**, it should be understood that the system **10** may include multiple postal service facilities **45**. In one embodiment, the postal service **400** extends beyond the border shown in **Fig. 1** to include one or more mail pre-sorting facilities **75** and one or more holding facilities **70**. It should be understood that various government postal services **400** include a variety of systems and facilities that may be adapted to operate according to the system **10** of the present invention.

In one embodiment of the present invention, the transport business **200** monitors and administers the inventive system **10** in a way that ensures a profitable and economical result for each participant.

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Transportation

The transportation steps between and among the facilities in the system **10** include, from left to right on **Fig. 1**, container transport **53**, pool transport **55**, and batch transport **58**. Container transport **53** includes the collection and shipment of containers **50** from senders **100**

to one or more holding facilities **70** via one or more container transport vehicles **24**. Pool transport **55** includes the collection and shipment of pools **80** from holding facilities **70** to one or more pre-sorting facilities **75** via one or more pool transport vehicles **34**. Batch transport **58** includes the collection and shipment of pre-sorted batches **90** from mail pre-sorting facilities **75** to one or more postal service facilities **45** via one or more batch transport vehicles **44**.

Container transport **53**, in one embodiment, transfers containers **50** from a postal facility **45** to one or more holding facilities **70** after a medium-sized batch of unsorted mail has been identified and diverted.

In another embodiment, container transport **53** is accomplished by the transport business **200** in one embodiment of the present invention. The transport office **20** may dispatch a fleet of container transport vehicles **24** on a plurality of routes, some of which may include regular customers of the transport business **200**. In one aspect, a participating sender **100** may submit a request **110** to the transport office **20** (see **Fig. 3**) to pickup one or more containers **50**. In another aspect, a participating sender **100** may drop a container **50** at a designated location **120** such as a retail mailing center or a drop box, where containers **50** may be routinely collected at a regular time by a container transport vehicle **24**.

Pool transport **55**, in one embodiment, is accomplished by the mail pre-sorting business **300**. Pool transport **55**, however, may be accomplished by the transport business **200**, by another carrier, or by a combination of these, depending upon the number, location, and size of the pools **80** to be collected for processing. It should be understood that multiple pre-sorting businesses **300** may participate in the system **10** of the present invention.

Batch transport **58**, in one embodiment, is accomplished by the mail pre-sorting business **300**. The postal service **400**, however, or another carrier may accomplish the batch transport **58** step. The

number, location, and size of the pre-sorted batches **90** to be collected may affect the participants in the batch transport **58** step.

It should be understood that the example routes shown for the transport steps **53, 55, 58** in **Fig. 1** are simplified for clarity. The number and variety of mail senders **100** is only limited by the extent to which the senders **100** may benefit from participating in the system **10**. The container transport **53** step may include multiple hubs, intermediate stops, transfer points, and a variety of vehicles in order to transport the containers **50** to the most appropriate holding facility **70**. Similarly, the pool transport **55** and batch transport **58** steps may take place in a hub-and-spoke arrangement of facilities and transfer points not shown in **Fig. 1**. Moreover, almost any kind of transportation device, including without limitation trucks, package cars, aircraft, and rail systems, may be used as a transport vehicle **24, 34, 44** within the system **10** of the present invention.

Preferably, every step of the described method and system **10** is completed within a twenty-four-hour period. In addition to the economic benefits of the present invention, the mail sender **100** may receive same-day processing and transportation of the mail pieces to the postal service **400**.

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Processing

Fig. 2 is a detailed view of the mail processing steps depicted more generally in **Fig. 1**. From left to right, **Fig. 2** shows a sender **100**, a holding facility **70**, a mail pre-sorting facility **75**, and a postal service facility **45**. The discrete mail processing steps are depicted inside each facility. Also, the transport steps **53, 55, 58** are indicated generally between the facilities.

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Sender Tasks

In one aspect of the present invention, each sender **100** may use a postage machine to meter **51** postage onto each mail piece. It should be understood that the decimalization (including tenths of a cent)

of reduced postal rates established by the postal service **400** typically requires the sender **100** to use a postage machine instead of a stamp for applying postage to each mail piece. The sender might also obtain a postage label electronically. The term "meter" as used herein includes any and all methods of applying postage to a mail piece. Generally, the unsorted mail pieces **95** are metered **51** at a program rate **60** (see **Fig. 3**). The program postage rate **60**, in some cases, may be the same as the first-class or full postage rate **64**. The sender **100** then fills **52** a container **50** with the unsorted mail pieces **95**.

In one alternative embodiment, the sender **100** applies no postage before filling **52** the container **50** with the unsorted mail pieces **95**. The step of metering **51** the program rate **60** onto each mail piece is performed by the pre-sorting business **300**, after which the cost of the postage applied (plus an additional fee, perhaps) is charged to the sender **100**. Although this alternative requires an additional billing step, it relieves the sender **100** of the burden of purchasing or leasing and maintaining a postage machine and eliminates the task of metering **51** postage onto each mail piece **95**.

In another aspect of the present invention, each container **50** may be pre-addressed to a particular holding facility **70**. In one embodiment, the transport business **200** may provide a plurality of empty containers **50** to one or more participating mail senders **100**. The containers **50** may be durable and suitable for repeated uses.

Each container **50** may be encoded for tracking purposes in a manner known to those skilled in the art. The tracking system may include scanning the unique code on each container **50** at key checkpoints along the way and may further include making such information available to the mail senders **100**, thereby allowing the sender **100** to follow the progress of each container **50**.

The tracking and scanning of the present invention enables the transport business **200** to monitor the progress of each container **50**. If, for example, a delivery scan does not occur on the same day as an origin scan, an exception or fault notice will be generated. If and when

such an exception is generated, the transport business **20** may immediately activate its exception solution function and track the container **50** to resolve the delay.

It should be noted that the steps of applying postage to the mail pieces and filling some type of container are tasks that, typically, are already performed by mail senders **100** who process mail in sufficient quantities to potentially earn a discounted postage rate.

In another aspect of the present invention, the system **10** operates efficiently and economically without the need to count the number of unsorted mail pieces **95** in each container **50**. As will be understood, the transport fee **102** for shipping, preferably, is paid on a flat rate, per-container basis instead of on a per-mail-piece basis, thereby eliminating the need for the sender **100** or the transport business **200** to count mail pieces in order to calculate a fee.

In one alternative embodiment, the transport fee **102** is paid according to the weight of the container **50** instead of a flat rate. In this embodiment, the amount of the transport fee **102** would depend, in part, on the number of mail pieces **95** inside the container **50**. Still, the task of counting the number of mail pieces **95** may be avoided when the transport fee **102** is paid on a by-weight basis.

The batch of unsorted mail pieces **95** is described herein as being "unqualified" because it does not qualify for a discount, if any, offered by the postal service **400** for pre-sorted mail. A completely unsorted batch of mail, of course, would not qualify as pre-sorted mail. It should be understood, however, that a batch of mail may be sorted to some degree, but still not qualify as a pre-sorted batch under the regulations of the postal service **400**. Hence, the term unqualified as used herein includes partially sorted batches of mail.

The container transport **53** step moves the container **50** from the sender **100** to a holding facility **70**.

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Holding Facility Tasks

In another aspect of the present invention, the collected containers **50** are gathered or pooled **54** into a pool **80** at a holding facility **70**. In one embodiment, where the holding facility **70** is part of the transport business **200**, the transport business pools **54** the containers **50**. The pool **80** is held in a designated location for later pickup and transport. The pool **80** may be held on a particular loading dock at the holding facility **70** or, in some cases, at the mail pre-sorting facility **75**. Preferably, the containers **50** are not opened during the pooling **54** step.

The act of pooling **54** may be as simple as putting the containers **50** in a designated bin, or as elaborate as queuing the containers **50** in a staging area into different pools **80** for pickup by certain pool transport vehicles **34** (shown in **Fig. 1**). The pool transport **55** step moves the pools **80** from the holding facility **70** to a mail pre-sorting facility **75**.

It should be noted that the containers **50** collected from a plurality of mail senders **100** participating on a given day may contain different types of mail pieces. For example, the mail pieces **95** in a certain container **50** may be unsorted or partially sorted. The container **50** may contain many mail pieces **95** or relatively few. Thus, the plurality of containers **50** received at a holding facility **70** may include an unknown quantity of mail pieces **95** in an unknown or mixed sort condition.

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Pre-Sorting Tasks

In another aspect of the present invention, the pre-sorting facility **75** opens the containers **50** and commingles **56** the mail pieces therein. The commingled mail pieces **85** are then pre-sorted **57** into a pre-sorted batch **90**.

In one embodiment, the act of commingling **56** occurs when the container **50** is opened and the unsorted mail pieces **95** are

placed into the machine for pre-sorting **57**. The commingling **56** may or may not result in a mixing of unsorted mail pieces **95** from the system **10** of the present invention with mail pieces from senders who did not participate in the system **10**. The act of commingling **56** as contemplated by the system **10** of the present invention generally includes the integration of unsorted mail pieces **95** from disparate senders **100** into the batch-by-batch mail pre-sorting system typically performed by a mail pre-sorting business **300**. In certain systems, for example, the mixing of mail pieces may occur in the ordinary manner, by filling a bin or hopper with the unsorted mail pieces **95**. In other systems, however, the physical mixing of mail pieces may occur only during an ongoing pre-sorting process **57**. In other words, the steps of commingling **56** and pre-sorting **57** may occur simultaneously instead of as discrete tasks. In either instance, the commingling **56** occurs when the unsorted mail pieces **95** are incorporated into the system used by the particular mail pre-sorting business **300**.

In another aspect of the present invention, the pre-sorting facility **300**, at some place and time, officially tenders **136** the pre-sorted batch **90** to the postal service **400**. The official tender **136** may take place, for example, on the loading dock at the pre-sorting facility **75** if the postal service **400** has sent a batch transport vehicle **44** to collect the batch **90**. On the other hand, the tender **136** may occur at the loading dock of the postal service **400** if the pre-sorting facility **75** delivers the batch **90**. Hence, the act of tendering **136** may include a transporting the batch **90**. Although the tender **136** is shown taking place inside the mail pre-sorting facility **75** in **Fig. 3**, it should be understood that the tender **136** may occur at any location. In any event, the participating mail sender **100** is relieved of the step of transporting its mail pieces and tendering the batch to the local postal service facility **45**. The burden of transporting a relatively small batch of mail is another one of the administrative tasks that a mail sender **100** need not perform if it participates in the inventive system **10**.

In a related aspect of the invention, the tender **136** of the batch **90** is typically accompanied by a sorting certificate **36** (see **Fig. 3**). Depending upon the postal regulations, the information required in a sorting certificate **36** may be contained in a manifest or in another shipping document describing the attributes of the pre-sorted batch **90** in sufficient detail. As used herein, the term "certificate" shall include a certificate, a manifest, or other documentation required to satisfy the regulations of the postal service **400**. The certificate **36** must be in proper form to earn a rebate **42** (see **Figs. 3** and **4**) from the postal service **400**. The pre-sorting business **30** is already accustomed to and equipped for preparing certificates **36** in the most cost-effective way. The burden and complexity of preparing a proper certificate **36** is one of the administrative tasks that a mail sender **100** need not perform when it participates in the inventive system **10**.

The batch transport **58** step moves the pre-sorted batches **90** from the mail pre-sorting facility **75** to the postal service facility **45**.

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Postal Service Tasks

In another aspect of the present invention, the postal service **400** receives the batch **90** when it is tendered **136** by the pre-sorting business **300**. The batch **90** is then inspected **59** by the postal service **400** to determine the entry rate **62** (see **Fig. 3**) for the mail pieces contained within the batch **90**. The step of inspecting **59** the batch **90** generally includes an examination of the certificate **36**. The batch **90** is then readied for delivery to the individual addressees.

The pre-sorting **57** accomplished at the pre-sorting facility **75** reduces the processing burden placed upon the postal service **400**.

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The Postage Rates

Referring briefly to the graph in **Fig. 4**, the economy of the system **10** of the present invention is driven, in part, by the reduced postage rates for pre-sorting offered by the postal service **400**. The full postage rate **64** is for unsorted mail. The program postage rate **60** is

applied by the sender **100** to each unsorted mail piece **95**. Generally, the program rate **60** is somewhat less than the full rate **64**, providing a savings to program participants. The entry postage rate **62** is based upon the degree of pre-sorting accomplished, as established by the postal regulations and as detailed in the sorting certificate **36**.

As an example, the full rate **64** for unsorted first-class mail may be 34.0 cents, the program rate **60** may be set at 32.2 cents, and the entry rate **62** earned by pre-sorting may be 28.0 cents per mail piece.

The entry rate **62** secures an immediate rebate **42** for the mail pre-sorting business **300**, in exchange for the degree of sorting accomplished. The rebate **42** per mail piece generally represents the difference between the program rate **60** (which has already been metered **51** onto each mail piece **95** by the sender **100** or by another participant in the system **10**) and the entry rate **62**.

In one embodiment where the postal service **400** may not offer reduced postage rates for pre-sorting, the economy of the system **10** of the present invention is realized through the reduced demand placed upon the mail sorting machinery and personnel at the postal service facility **45**. The reduced demand manifests itself in a variety of ways, such as reduced wear and tear on postal equipment, less need for additional postal sorting equipment, and fewer employees needed for manual sorting tasks. By reducing the burden on the postal service **400**, the solution offered by the system **10** of the present invention helps reduce the expense and delay caused by increased sorting loads.

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The Flow of Information and Funds

Fig. 3 is similar in form and outline to **Fig. 1**. The dotted lines represent the flow of information and the solid lines represent the flow of funds in the system **10** of the present invention.

In one aspect, the system **10** of the present invention may begin with a request **110** from a mail sender **100** who wants to participate in the system **10**. The request **110** may be directed toward the transport business **200** which, in one embodiment, acts as the

administrator of the system **10**. Alternatively, the request **110** may be directed toward the postal service **400** which administers the system **10** and selects batches of unsorted mail pieces **95** to be diverted for pre-sorting.

A request **110**, however, is not always necessary or required. Certain mail senders **100** may participate on a standing daily or other periodic basis. Other senders **100** may prepare a container **50** for pickup on a day when other parcels are being collected by the transport business **200**, making a request **110** unnecessary or redundant. Still other senders **100** may transport a container **50** to a designated location **120** such as a retail mailing center or a drop box, eliminating the need for a specific request **110**.

In another aspect of the present invention, the administrator of the system **10** may notify **160** the participating senders **100** of the program postage rate **60** to be metered **51** onto each unsorted mail piece **95**. Setting the program rate **60** may include an analysis of a variety of system factors, including the number of senders **100**, the expected contents of the pools **80** for a given day, the location and number of holding facilities **70** required to handle the volume, the location and number of pre-sorting facilities **75** required to pre-sort the mail pieces, and the location and number of postal service facilities **45** where the pre-sorted batches **90** will be received for delivery. In a stable operating environment, the program rate **60** may remain generally constant. The program rate **60**, however, may range from zero cents (unstamped) to the full rate **64**, depending upon conditions within the system **10**.

The task of metering **51** is included in **Fig. 3** as a step in the flow of funds because the mail sender **100** is applying postage at a cost equal to the program rate **60** to each mail piece. Metering **51** is the first step, in one embodiment, in the flow of funds in the system **10** of the present invention.

In one alternative embodiment, described above but not shown in **Fig. 3**, metering **51** is a later step, performed by the pre-sorting business **300** when the pool **80** is received. In this embodiment, the pre-

sorting business **300** opens each container **50** when it is received at the pre-sorting facility **75** and meters **51** the program rate **60** onto each mail piece **95**. This embodiment requires counting the number of mail pieces **95** in each container **50** because the cost of the postage applied (specifically, the program rate **60** times the number of mail pieces **95**) must be charged to the sender **100**. The total metering charge billed to the sender **100** may also include a handling fee to compensate the pre-sorting business **300** for accomplishing the task of metering **51** each piece **95**.

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The Transport Fee **102**

In another economic aspect of the system **10**, each sender **100** pays a transport fee **102** to the transport business **200**, preferably to a transport business office **20**, in exchange for the collection and transportation of each container **50** to the holding facility **70**. In one embodiment, the transport fee **102** includes not only the fee for the container transport **24** but also compensates the transport business **200** for administering and monitoring the system **10**. Preferably, the transport fee **102** is lower than the additional operating costs per piece that would be incurred to accomplish the pre-sorting of unqualified mail pieces **95** by the sender **100** internally.

Preferably, the transport fee **102** is not based on the number of unsorted mail pieces **95** in each container **50**, thereby eliminating the need for any participant to count the mail pieces **95**. In one embodiment, the transport fee **102** is paid on a flat rate, per-container basis, allowing the insertion of a maximum number of mail pieces **95** regardless of number or weight. In one alternative embodiment, the transport fee **102** is paid according to the weight of the container **50**, allowing the economical transport of smaller, lightweight batches of unsorted mail pieces **95**.

The Entry Rate **62** and The Rebate **42**

In another aspect of the invention, the pre-sorted batch **90** is officially tendered **136** to the postal service facility **45**, as described above, along with the sorting certificate **36**. The information contained in the certificate **36** allows the postal service **400** to determine the entry rate **62** for the mail pieces contained in the pre-sorted batch **90**. The entry rate **62** is based upon the degree of pre-sorting accomplished.

In another aspect of the information flow of the system **10**, the postal facility **45** reports **162** the entry rate **62** to a postal office **40**. The entry rate **62** is used by the postal office **40** to establish the rebate **42**. It should be understood, however, that the act of reporting **162** the entry rate **62** may occur immediately upon the tender **136** and inspection **59** of the pre-sorted batch **90** (see **Fig. 2**), without a discrete step of communication between a postal facility **45** and a separate postal office **40**.

In a related aspect of the flow of funds in the system **10**, the mail pre-sorting business **30** receives a rebate **42** from the postal service **400**. The rebate **42** generally represents the difference between the entry rate **62** and the metered program rate **60** on each mail piece, times the number of mail pieces. For example, the postal service regulations may allow mail pieces initially metered at a program rate **60** of 32.2 cents to be mailed at a entry rate **62** of 28.0 cents, resulting in a rebate **42** to the pre-sorting business **300** in the amount of 4.2 cents per mail piece.

In embodiments where the postal service **400** owns and operates the mail pre-sorting facility **75**, the rebate **42** is realized not in cash but in the form of reduced demand placed upon the mail sorting machinery and personnel at the postal service facility **45**. By reducing the burden on the postal service **400**, the solution offered by the system **10** of the present invention helps reduce the expense of postage and reduce delays in mail delivery.

The Transporter Rebate **32**

In one preferred embodiment, the mail pre-sorting business **300** pays a transporter rebate **32** to the transport business **200**. The transporter rebate **32** may be thought of as a portion of the rebate **42** earned by the pre-sorting business. The terms and amount of the transporter rebate **32** are agreed upon between the transport business **200** and the pre-sorting business **300**. For example, the transporter rebate **32** may be a flat fee tied to the number of pools **80** created, or it may be a per-piece fee based upon the number of mail pieces in the batch **90**, or it may be a fixed percentage of the rebate **42** received from the postal service **400**. In one embodiment, the transporter rebate **32** compensates the transport business **200** for accomplishing the container transport **53** step, for pooling **54** the containers **50** into a pool **80**, and for administering and monitoring the system **10**. The amount of the transporter rebate **32** is preferably larger than the amount of the rebate **42**.

The rebate **42** paid by the postal service **400** is generally a per-piece rebate because the mail pieces **95** were initially metered at the program rate **60** by the sender **100**. The transporter rebate **32**, however, may be paid per-piece, as a flat rate, or as a percentage of the rebate **42**, depending upon the agreement between the transport business **200** and the pre-sorting business **300**.

In embodiments where the postal service **400** transports and pools **54** its own containers **50**, the transporter rebate **32** is realized not in cash but in the form of reduced demand placed upon the mail sorting machinery and personnel at the postal service facility **45**. The transporter rebate **32** can be seen in the reduced expenses of processing and in the delays avoided because of more efficient transportation and handling of medium-sized batches of mail.

Advantages

In one aspect of the present invention, the inventive system **10** creates a silent cooperative of participating mail senders **100** working together to earn a lower effective postage rate, while the senders **100** remain unidentified and unknown to one another. The invention, therefore, takes advantage of the power of a cooperative venture without the usual burden on its members of finding similarly-situated mail senders **100** with similar needs. Also, the participants may change from day to day, freely entering or exiting the cooperative without the barriers to entry sometimes present in more formalized cooperatives.

In another aspect, the system **10** of the present invention provides a participating mail pre-sorting business **300** with a source of large pools **80** of containers **50** filled with unsorted mail pieces **95**. Because pre-sorting businesses **300** typically refuse lower-quantity batches of mail, the pooling of mail pieces **95** from a plurality of lower-volume senders **100** is a source of business not otherwise available to the mail pre-sorting business **300**. By increasing the volume of mail to be pre-sorted, the pre-sorting business **300** increases its capacity to earn rebates **42** from the postal service **400**.

It should be understood that a distinct advantage of the system **10** is that the amount of the rebate **42** is high enough to profitably fund the pre-sorting and the transportation, while also allowing the participating mail sender **100** to meter its unsorted mail pieces **95** at a reduced, program rate **60**. The total program cost to the sender **100** of applying the program postage rate **60** to each mail piece **95** and paying the transport fee **102** is, preferably, less than the cost of applying the full rate **64** to each mail piece **95**.

Preferably, the amount of the rebate **42** enables all the participants in the system to continue doing what they do best, without increased burdens or additional tasks. More specifically, the mail pre-sorting business **300** is already in the business of commingling and pre-sorting large quantities of mail. The transport business **200** is already in

the business of collecting, tracking, and monitoring the delivery of containers. The mail sender **100**, by participating in the system **10**, is free to concentrate on its ongoing business rather than learning the complex pre-sorting regulations, preparing sorting certificates **36**, and transporting small batches of mail to the postal service facility **45** every day.

By participating in the inventive system **10**, the mail sender **100** may meter its mail at the lower program rate **60** without incurring additional operating costs, in exchange for the payment of the transport fee **102** to the transport business **200**. In one preferred embodiment, the transport fee **102** is lower than the additional operating costs that would have been necessary to accomplish the pre-sorting internally. The sender's mail pieces become part of a larger commingled batch that is pre-sorted to a high level of classification, thereby facilitating quicker delivery, which is a benefit to mail recipients as well.

While the economics of the system **10** is in some cases driven by the rebate **42** earned for pre-sorting, in other embodiments, the intangible savings in equipment, human resources, and time are sufficient to allow any postal service **400** and any mail preparation system to benefit from the system **10** of the present invention.

The reduced program postage rate **60** provides an immediate savings for the sender **100** for each mail piece **95**. In a related aspect of the present invention, the mail sender **100** need not count the number of mail pieces **95** being placed into each container **50** because, preferably, the transport fee **102** for shipping is paid on a per-container basis. This aspect of the preferred pricing structure, together with the reduced program postage rate **60** per piece, allows the sender **100** to offset the cost of the transport fee **102** against the savings (per piece) provided by the program rate **60**. For example, a relatively small difference between the full rate **64** and the program rate **60**, such as 1.8 cents per mail piece, may offset a transport fee **102** of $8.00, for example, if the quantity of mail pieces is sufficiently large. A batch of eight hundred mail pieces, for example, at a gross savings of 1.8 cents

per mail piece would yield a total savings of $14.40 which, offset against a transport fee of $8.00, would yield a net savings of $6.40.

In one alternative embodiment, the transport fee **102** is paid according to the weight of the container **50** instead of a flat rate. In this embodiment, the by-weight pricing structure allows the sender **100** to offset the cost of the transport fee **102** (per ounce, for example) against the savings (per piece) provided by the program rate **60**. For example, a sender **100** has a very small batch of two hundred mail pieces **95**. Using a gross savings of 1.8 cents per mail piece would yield a total savings of only $3.60, which would not fully offset a flat-rate transport fee **102** of $8.00. The alternative per-ounce transport fee **102**, however, might be less than $3.60, resulting in a net savings for the sender **100** when sending a small batch.

The transport business **200**, by participating in the inventive system **10**, receives a transport fee **102** from the sender **100** and a transporter rebate **32** from the mail pre-sorting business **300**. In one preferred embodiment, the fees earned by the transport business **200** provide a profit over and above the cost of collecting and pooling the containers **50** and, in one embodiment, administering the system **10**. Furthermore, as a participant in the inventive system **10**, the transport business **200** may establish a relationship with a plurality of participating mail senders **100** and develop good will for other services to be offered.

Thus, the present invention provides a comprehensive system **10** in which cooperating mail senders **100**, service businesses **200**, **300**, and in some cases the postal service **400**, may collect and pool mail pieces, earn a rebate **42** by commingling and sorting the mail pieces into a large, qualified, pre-sorted batch **90**, and distribute the rebate **42** and/or the intangible savings among the participants in the system **10** according to agreed terms.

Thus, the present invention provides a system and method for facilitating the entry of low-volume mail senders **100** into the discounted-rate mail system of a postal service **400**. For the mail sender

100, the inventive system **10** earns a lower postage rate, eliminates the sorting task, provides economical transportation of the unsorted mail pieces **95** in a standard container **50**, allows tracking of each container **50**, and accomplishes the delivery of pre-sorted mail to the postal service **400** within a twenty-four-hour period.

For the postal service **400** that establishes its own holding facilities **70** and/or pre-sorting facility **75**, the inventive system **10** reduces reliance on the sorting apparatus and personnel at the main postal service facility **45**, provides economical transportation of the unsorted mail pieces **95** in a standard container **50**, diverts the sorting of medium-sized batches to a separate mail pre-sorting facility **75**, and accomplishes the delivery of pre-sorted mail to the postal service **400** within a twenty-four-hour period.

While this invention has been described in specific detail with reference to the disclosed embodiments, it will be understood that many variations and modifications may be effected without departing from the invention as described in the appended claims.